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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,139	06/30/2003	Sanjay Ghemawat	0026-0029	3005
44989	7590	09/21/2007		
HARRITY SNYDER, LLP 11350 Random Hills Road SUITE 600 FAIRFAX, VA 22030			EXAMINER THAI, HANH B	
			ART UNIT 2163	PAPER NUMBER
			MAIL DATE 09/21/2007	DELIVERY MODE PAPER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

MAILED

SEP 21 2007

Technology Center 2100

Application Number: 10/608,139
Filing Date: June 30, 2003
Appellant(s): GHEMAWAT ET AL.

Paul A. Harrity
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 1, 2007 appealing from the Office action mailed November 1, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,324,580	JINDAL	11-2001
6,070,191	NARENDRAN	5-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Jindal et al. (US 6,324,580 B1).

Regarding claim 1, Jindal discloses a method for distributing data in a system that includes a plurality of servers, the method comprising:

- identifying ones of the servers to store a replica of the data based on at least one of utilization of the servers, prior data distribution involving the servers, or failure correlation properties associated with the servers (abstract; summary; col.4, lines 40-67 and col.5, lines 57-60); and
- placing the replicas of the data at the identified servers (abstract; summary and col.4, lines 40-67).

Regarding claim 2, Jindal discloses the method wherein the identifying ones of the servers include: identifying underutilized ones of the servers as candidates to store the replicas of the data (abstract; summary and col.4, lines 40-67).

Regarding claim 3, Jindal discloses the method wherein the underutilized servers are identified based on disk space usage below a determined amount (col.4, lines 40-67; col.5, lines 57-60; col.6, lines 32-46 and col.7, lines 11-47).

Regarding claim 4, Jindal discloses the method wherein the identifying ones of the servers include: identifying ones of the servers that have not been involved in a recent data distribution as candidates to store the replicas of the data (abstract; summary; col.4, lines 40-67 and col.5, lines 57-60).

Regarding claim 5, Jindal discloses the method wherein the identifying ones of the servers includes: identifying system conditions that affect two or more of the servers, and identifying ones of the servers as candidates to store the replicas of the data based on the identified system conditions (col.4, lines 40-67; col.5, lines 57-60 and col.6, lines 32-46).

Regarding claim 6, Jindal discloses the method wherein a number of the replicas of the data stored by the servers is user-configurable (abstract; summary; col.4, lines 40-67 and col.5, lines 57-60).

Regarding claim 7, Jindal discloses a system for distributing chunks in a network that includes a plurality of servers, comprising:

- means for selecting ones of the servers to store replicas of the chunks based on at least one of utilization of the servers, prior chunk distribution involving the servers, or failure correlation properties associated with the servers (abstract; summary; col.4, lines 40-67 and col.5, lines 57-60); and
- means for storing the replicas of the chunks at the selected servers (abstract; summary; col.4, lines 40-67 and col.5, lines 57-60) to at least one of increase reliability of the chunks, increase availability of the chunks, or increase bandwidth utilization in the system (col.6, lines 31-45, Jindal).

Regarding claim 8, Jindal discloses a file system, comprising:

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- a plurality of servers that store replicas of chunks (abstract; summary; col.4, lines 40-67 and col.5, lines 57-60); and
- a master ("central server", abstract) connected to the servers (abstract; summary; col.4, lines 40-67 and col.5, lines 57-60), the master being configured to:
 - o identify one or more of the servers to store a replica of a chunk based on at least one of utilization of the servers, prior chunk distribution involving the servers, or failure correlation properties associated with the servers, and place the replicas of the chunk at the identified one or more servers (abstract; summary; col.4, lines 40-67 and col.5, lines 57-60).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jindal et al. (US 6,324,580 B1) in view of Narendran et al. (US 6,070,191).

Regarding claim 19, Jindal discloses a method for distributing chunks of data in a system that includes a plurality of servers that store replicas of the chunks, the method comprising:

- monitoring utilization of the servers (col.5, lines 57-60 and col.6, lines 56-64, Jindal);
- determining whether to distribute any of the replicas (col.6, lines 31-45 and 56-64, Jindal);

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- selecting one or more of the replicas to distribute based on the utilization of the servers (col.6, lines 31-45 and 56-64, Jindal);
- selecting one or more of the servers to which to move the one or more replicas (col.6, lines 31-45 and 56-64, and col.8, line 53 to col.9, line 27 Jindal); and
- moving the one or more replicas to the selected one or more servers (col.6, lines 31-45 and 56-64, and col.8, line 53 to col.9, line 27 Jindal).

Jindal, however, does not explicitly disclose redistribute the replicas. Narendran, on the other hand, discloses data distribution techniques for load-balanced fault-tolerant web access including redistributing replicated data from the failed server to achieve rebalance (see col.12, lines 12-38, Narendran). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the redistributing or rebalance technique of Narendran to derive the invention as claimed. The motivation of doing so would have been to provide an efficient system that can obtain a maximum flow with a minimum cost of a network flow system (abstract of Narendran).

Regarding claim 20, Jindal/Narendran combination discloses the method wherein the utilization of the servers relates to an amount of free disk space available at the servers (col.5, lines 1-20, Narendran).

Regarding claim 21, Jindal/Narendran combination discloses the method wherein the selecting one or more of the servers includes: identifying underutilized ones of the servers as candidates to which to move the one or more replicas (col.6, lines 31-45 and 56-64, and col.8, line 53 to col.9, line 27 Jindal).

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Regarding claim 22, Jindal/Narendran combination discloses the method wherein the underutilized servers are identified based on disk space usage below a determined amount (col.5, lines 1-20, Narendran).

Regarding claim 23, Jindal/Narendran combination discloses the method wherein the selecting one or more of the servers includes: identifying ones of the servers that have not been involved in a recent redistribution as candidates to which to move the one or more replicas (col.6, lines 31-45 and 56-64, and col.8, line 53 to col.9, line 27 Jindal).

Regarding claim 24, Jindal/Narendran combination discloses the method wherein the selecting one or more of the servers includes: determining failure correlation properties associated with the servers, and identifying ones of the servers based on the failure correlation properties as candidates to which to move the one or more replicas (col.6, lines 28-51, Narendran).

Regarding claim 25, Jindal/Narendran combination discloses the method wherein the moving the one or more replicas includes: deleting the one or more replicas from one or more of the servers, and instructing the selected one or more servers to copy the one or more replicas from another one or more of the servers (col.6, lines 31-45 and 56-64, and col.8, line 53 to col.9, line 27 Jindal).

Regarding claim 26, Jindal discloses a system for distributing data in a network that includes a plurality of servers that store replicas of the data, the system comprising:

- means for monitoring utilization of the servers (col.5, lines 57-60 and col.6, lines 56-64, Jindal);

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- means for selecting one or more of the replicas to distribute based on the utilization of the servers (col.6, lines 31-45 and 56-64, Jindal);
- means for identifying one or more of the servers to which to move the one or more replicas (col.6, lines 31-45 and 56-64, and col.8, line 53 to col.9, line 27 Jindal); and
- means for redistributing the one or more replicas to the identified one or more servers (col.6, lines 31-45 and 56-64, and col.8, line 53 to col.9, line 27 Jindal) to at least one of increase reliability of the chunks, increase availability of the chunks, or increase bandwidth utilization in the system (col.6, lines 31-45, Jindal).

Jindal, however, does not explicitly disclose the replicas. Narendran, on the other hand, discloses data distribution techniques for load-balanced fault-tolerant web access including redistributing replicated data from the failed server to achieve rebalance (see col.12, lines 12-38, Narendran). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the redistributing or rebalance technique of Narendran to derive the invention as claimed. The motivation of doing so would have been to provide an efficient system that can obtain a maximum flow with a minimum cost of a network flow system (abstract of Narendran).

Regarding claim 27, Jindal discloses a file system, comprising:

- a plurality of servers configured to store replicas of chunks of data (abstract; summary; col.5, lines 57-60 and col.6, lines 56-64, Jindal); and
- a master ("central server", abstract) connected to the servers, the master being configured to:

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- select one or more of the replicas to distribute based on utilization of the servers (col.6, lines 31-45 and 56-64, Jindal),
- identify one or more of the servers to which to move the selected one or more replicas (col.6, lines 31-45 and 56-64, and col.8, line 53 to col.9, line 27 Jindal), and
- move the selected one or more replicas to the identified one or more servers (col.6, lines 31-45 and 56-64, and col.8, line 53 to col.9, line 27 Jindal).

Jindal, however, does not explicitly disclose the replicas. Narendran, on the other hand, discloses data distribution techniques for load-balanced fault-tolerant web access including redistributing replicated data from the failed server to achieve rebalance (see col.12, lines 12-38, Narendran). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the redistributing or rebalance technique of Narendran to derive the invention as claimed. The motivation of doing so would have been to provide an efficient system that can obtain a maximum flow with a minimum cost of a network flow system (abstract of Narendran).

(10) Response to Argument

A. Examiner's response to Appellant's argument A:

Applicant's arguments regarding 101 issues are found persuasive. Therefore, the §101 rejection of claims 1-8 and 19-27 is withdrawn.

B. Examiner's response to Appellant's argument B: the rejection under 35 U.S.C. § 102(b) based on Jindal et al. (U.S. Patent No. 6,324,580) should be affirmed.

Appellant argues that “Jindal et al. does not disclose or suggest identifying ones of the servers to store a replica of the data based on at least one of utilization of the server prior data distribution involving the servers.” (Appellant’s 6/1/07 Brief, pages 32, 34-36 and pages 42-44).

Examiner respectfully disagrees. Jindal discloses the request for replicated service or application among a plurality of servers combine a central replicated monitor object (see abstract; col.4, lines 49-67; col.5, lines 56-63; col.7, lines 34-47, Jindal), Jindal clearly discloses that executing a replicated service is selected and processed to a preferred server (col.4, lines 49-67; col.5). This teaching of Jindal is clearly illustrating the storing of replicas of the data as demonstrated in applicant’s claimed language of identifying and placing the replicas of the data at the identified server.

Appellant argues, “Jindal et al. does not disclose or suggest identifying underutilized ones of the servers as candidates to store the replicas of the data.” (Appellant’s 6/1/07 Brief, pages 36-37).

Examiner respectfully disagrees. As discussed above, Jindal discloses the request for replicated service or application among a plurality of servers combine a central replicated monitor object (see abstract; col.4, lines 49-67; col.5, lines 56-63; col.7, lines 34-47, Jindal) including identifying a utilized server (i.e. “referred server) and underutilized ones of the servers (i.e. “closest server”) or a different server that is not a referred server (see col.4, lines 49-67).

Appellant argues “Jindal et al. does not disclose or suggest identifying ones of the servers that have not been involved in a recent data distribution as candidates to store the replicas of the data.”

Examiner respectfully disagrees. As already discussed above, Jindal clearly discloses the request for replicated service or application among a plurality of servers combine a central replicated monitor object (see abstract; col.4, lines 49-67; col.5, lines 56-63; col.7, lines 34-47, Jindal) including identifying a utilized server (i.e. “referred server”) and underutilized ones of the servers (i.e. “closest server”) or a different server that is not a preferred server (see col.4, lines 49-67) and thus the underutilized servers are ones of the servers that have not been involved in a recent data distribution as candidates to store the replicas of the data.

Appellant argues that “Jindal et al. does not discloses or suggest identifying system conditions that affect two or more of the servers, or identifying ones of the servers as candidates to store the replicas of the data based on the identified system conditions.”

Examiner respectfully disagrees. Jindal clearly discloses the request for replicated service or application among a plurality of servers combine a central replicated monitor object (see abstract; col.4, lines 49-67; col.5, lines 56-63; col.7, lines 34-47, Jindal). The request for configuration and purpose of the status objects depend upon the policy that have been selected for choosing a preferred server. Therefore, this “policy” is equivalent to the claimed “system condition” that affect on the servers.

Appellant argues, “a number of the replicas of the data stored by the servers is user-configurable.”

Examiner respectfully disagrees. Jindal clearly discloses client is configured to provide a user access to a network to identify a server that handle the replica request (col.5, lines 37-55, Jindal) and thus read on the claimed limitation of “a number of the replicas of the data stored by the servers is user-configurable.”

C. Examiner’s response to Appellant’s argument C: the rejection under 35 U.S.C. § 103(a) based on Jindal et al. (U.S. patent No. 6,324,580) in view of Narendran et al. (U.S. patent No. 6,070,191) should be affirm.

Applicant argues that “Jindal et al. and Narendran et al. do not discloses or suggest determining whether to redistribute any of the replicas” (Appellant’s 6/1/07 Brief, pages 45-49) have been considered but not found persuasive.

Examiner respectfully disagrees. The replicated system has to have the ability of redistribution despite that it does not recite the claimed limitation in verbatim. Jindal clearly discloses the replicated services include the redistribution based on utilization of server (i.e. “referred server”) as illustrated in the claimed language.

However, in further supporting the examiner’s obviousness reasoning for rejecting the “redistributed” claimed limitation. Narendran has been cited as supportive evidence for the teaching of redistribution or redirection of the data among a plurality of servers (abstract and col. 4, lines 41-42, Narendran). As such, Jindal in view of Narendran clearly render the claimed limitation obvious to redistribute data as claimed. The repeated motivation would have been to a computer’s efficiency that can obtain a maximum flow with a minimum cost of a network flow

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system. Examiner considers both redistribution and redirection of data (see abstract and summary, Narendran) as being the movement of data from point A to point B and vice versa (as well as point C, D and F). Thus, the combination of Jindal and Narendran discloses the claimed limitations.

Appellant repeats similar arguments given above for claims 21-27 (Appellant's 6/1/07 Brief, pages 49-58). The examiner reiterates her response provided above and incorporates it by reference.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Hanh Thai

September 11, 2007

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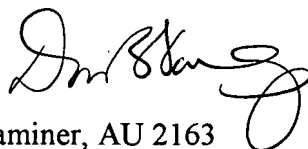
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